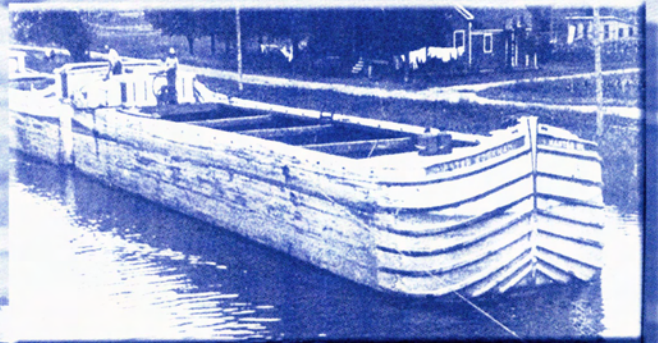


The Erie Canal: *New York's Water Highway*



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Project Director

Richard K. Lieberman

Associate Project Directors

Eric Wolf
Susan Waide

Design Director

John McColl

Administration

Eduvina Estrella

Consultant

Joe Brincat

Distribution

Tyrene Wright
Mike Ondrusek

La Guardia and Wagner Archives Staff

Vikram Ananthapadmanabhan
Carlos Carranza
Rob Dishon
Brian Gurian
Karla P. Guzman
Joseph M. Komljenovich
Susan Landaira
Melissa Rodriguez
Angela Sandy

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Bibliographic Abbreviations

Colden, C., *Memoir*:
Colden, Cadwallader D., *Memoir
at the Celebration of the New
York Canals*, New York, 1825.
Marco Paul:
Abbot, Jacob, *Marco Paul's
Voyages & Travels on the Erie
Canal*, New York, Harper &
Brothers, 1852.

Credits

Cover: Photo, Keg from which Governor DeWitt Clinton poured water from Lake Erie into the Atlantic Ocean on Oct. 26th 1825, upon the completion of the Erie Canal, Acc. #X48, Negative #707 and "New Packet Boat on the Champlain Canal" [1825 Library Call #SY-1825-52 (no negative)] The New-York Historical Society; Celebration at City Hall, Colden, C., *Memoir*; Line Boat and Mules, Erie Canal Museum.

Page 3: Map, Wolf, E.

Page 4: Portrait, Colden, C., *Memoir*; relief, Clinton's tomb, Green-Wood Cemetery, Brooklyn, Photo, Waide, S.

Page 6: Print: J.L. Morton; W. H. Dougal, Erie Canal Opening, Line engraving, November 4, 1825, Museum of the City of New York, Gift of Harry MacNeil Bland, 50.16, Mural, Dewitt Clinton High School.

Page 7: Keg, The New-York Historical Society (see cover); Map, Waide, S. & Wolf, E.

Pages 8-9: Emblems, Firefighters Colden, C., *Memoir*.

Page 10-11: Advertisement, Longworth's American Almanac, New-York City Register and City Directory, 1825, page 9.

Page 12: Photo, Erie Canal Museum; Diagrams, Wolf, E.

Page 13: Map, Wolf E.; Photo, Donaldson, M.

Page 14: Packet Boat, *Marco Paul*; Lineboat, Tug and barges, Erie Canal Museum.

Page 17: Advertisement, Erie Canal Museum.

Page 18-19: Print of Canal Families and Map [modified], The Canal Society of New York State.

Back Cover: Erie Canal Song, New York State Canal Corporation; Photo, Erie Canal Museum.

Insert: Lockport, New York State Archives; Map, McColl, John.

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LaGuardia Community College/CUNY
31-10 Thomson Avenue, E-238, Long Island City, NY 11101
Tel: 718/482-5065 Fax: 718/482-5069
www.laguardiaandwagnerarchive.lagcc.cuny.edu

Introduction

What is a canal? Canals are man-made channels of water. They can connect natural bodies of water such as rivers or lakes. These waterways make it easier to travel and to transport goods from one place to another. Canals were invented thousands of years ago. The Grand Canal of China is the oldest canal still in existence today. Over 1,000 miles long, it was begun in the 4th century B.C. and took centuries to build. Can you think of any modern canals in use today in the Middle East or Central America? _____

Where is the Erie Canal? Look at the map below. New York State's Erie Canal, built 1817-1825, was America's first grand canal, 363 miles long. It was called the Erie Canal because it connected Lake Erie with the Hudson River. The Hudson River flows south to New York Harbor and into the Atlantic Ocean. Albany and Buffalo were the eastern and western entrances to the canal. Steamboats carried passengers or towed canal boats carrying freight between New York City and Albany. The canal made it possible for the first time to travel entirely by water between New York City and the Great Lakes.

Why build the canal? When the American Revolution was over, settlers pushed west into the lands between the Appalachian Mountains and the Mississippi River. New York was the only eastern state with a natural land passage cutting through the mountains to the rich farmlands near the Lakes. People in New York State believed that a canal would make it easier to transport goods to the West and back. Farmers in western New York and across the mountains could quickly and cheaply ship crops, lumber and furs to market in the East. New York City could ship these products around the world. In return, New York City could easily ship products manufac-

tured locally or imported from abroad to the West. New York City would become the number one port in the country.

Why did other states want canals? New York was not the only city that wanted to be America's number one port. Boston, Philadelphia and New Orleans all competed with New York for this position. Before the Erie Canal was built, farmers in the Northwest Territory found it easier to ship crops by barge down the Ohio and Mississippi Rivers to New Orleans, a foreign port until 1803. Presidents George Washington and Thomas Jefferson believed that building canals would draw commerce away from New Orleans to the Atlantic Coast, forming stronger bonds between the old and new states. Southern states like Virginia hoped to combine canals with wagon travel over the mountains so that they would get the benefit of western trade instead of New York. The

Erie Canal gave the victory in this race to New York City, eventually making New York not only our country's largest port, but also its commercial and financial capital.



IN THE NEWS: 1800-1830

- 1801-1809: Thomas Jefferson is President.
- 1803: U.S. purchases the Louisiana territory from France for \$15 million, making New Orleans an American port.
- 1807: The steamboat Clermont makes successful trip from New York to Albany.
- 1809-1817: James Madison is President.
- 1812-15: War of 1812.
- 1817: Workers begin building the Erie Canal.
- 1817-1825: James Monroe is President.
- 1820: The population of Manhattan (124,000), Brooklyn, the Bronx, Queens and Staten Island passes 150,000. The population of the U.S. passes 9,600,000. The population of New York City today is 7,300,000. In 1820, New York City consisted only of Manhattan. Today, it includes all five boroughs.
- 1821: Emma Willard opens the Troy Female Seminary in Troy, NY, introducing math and science to the standard course of study for girls.
- 1825: The Erie Canal is finished.
- 1827: Slavery is abolished in New York State.

Why did New Yorkers want to build the canal? _____

Was the Erie Canal good for the cities of Boston, Philadelphia and New Orleans? Why or why not? _____

DeWitt Clinton and the Building of the Canal

Who was De Witt Clinton? De Witt Clinton was mayor of New York City from 1803-1815, except for the years 1807 and 1810. He believed that government should play an active role in helping people. He started a society for free public education and



improved **sanitation** to prevent disease. New York had been an important center for trade since its founding in the early 17th century. Farmers in the colony made flour from wheat and Native Americans traded furs like beaver pelts to settlers. Exporting these products made

New York an important **commercial, financial** and shipping center in America. Clinton was sure the Erie Canal would bring even more wealth, business and growth to the City, making New York one of the great commercial centers of the world.

Who paid for the canal? In 1810, the New York State legislature appointed a commission to plan the canal and raise money to build it. DeWitt Clinton was its most active member. The commissioners believed it would cost almost \$4,000,000 to build the 363 mile long canal. They tried to get the Federal government to help pay for it. President Madison feared the cost would ruin the national treasury. He thought states, not the Federal government, should pay for their own public works. Many people were against the canal. Why should other states pay a lot of money to build something they thought would only benefit New York? They thought it was a crazy idea – small canals were one thing, but no one had ever built a canal that size before! Even Thomas Jefferson thought it was an impossible scheme. It was clear New York would have to build the canal and pay for it by itself. In 1817, DeWitt Clinton convinced the State legislature that it could be done. The legislature passed a law to begin work on the canal. To raise money, the State issued documents called bonds to people or companies that loaned money to the State. The bond promised that the loan would be paid back with interest once the canal started earning money. In New York City, banks pooled together the savings of working people to loan money to the State. Soon major investors joined the effort. How would the canal earn money? The state would


collect tolls, or fees, from the canal boats carrying passengers and freight. Tolls were based on the number of passengers on the boat, or the weight of the cargo. That same year, 1817, DeWitt Clinton ran for governor of New York State. New Yorkers were impressed by his promise to make sure the canal was built, and elected him governor.

How was the canal built? The canal was built in three sections, with an engineer in charge of each section. Workers would have to dig a ditch that was 363 miles long, 40 feet wide and 4 feet deep. Lake Erie was 565 feet higher than the Hudson River. A way would have to be found to gradually lower the canal to the Hudson. There were rocky hills, swamps and rivers to cross. The middle section was flat, but the eastern and western sections were rocky and steep. Building the canal was hard and dangerous work. Bulldozers and jackhammers had not yet been invented, so workers had to use picks and shovels to dig



the ditch. Teams of horses and mules were used to move heavy tree stumps and other objects. Workers were hurt blasting rock with gunpowder. At one point, so many workers died from fever while draining swamps that replacements had to be found. New York City newspapers carried advertisements asking laborers to apply for work on the canal to replace them. New immigrants who were looking for work went north to apply for jobs. Many of these immigrants were Irish, one of the largest groups of immigrants in the early and mid-19th century. Most of the workers on the canal, however, were upstate residents living along the canal's route.

Success or Failure? Finally, in 1820, the 94-mile-long middle section was opened. Even so, many New Yorkers worried that the canal would not be finished and the State would lose money. Building the canal took more time and money than Clinton said it would. They called the canal "Clinton's Ditch." Clinton had bet his political life on the success of the canal. Anti-canal feeling was strong, and he did not run for governor in 1822. His political enemies took his job as canal commissioner



away from him in early 1824. But by the end of that summer, so much money had been collected in tolls that canal-critics realized that Clinton had been right all along. He was re-elected governor and got his job as

commissioner again. The canal was already a success when it was finished in 1825, at a cost of \$7,000,000. So much money was made on tolls that the cost of the canal was paid for within ten years!

1. Why did Governor Clinton think the canal would be good for the City? _____

2. What tools were used to build the canal? _____

3. How much money did people think it would cost to build the canal? _____

How much was the final cost? _____

How many dollars more than the original estimate was that? _____

4. How would the State collect money to pay back the banks and investors who loaned money to build the canal? _____

5. What were some of the dangers workers faced in building the canal? _____

6. What worries did people have about the canal in 1820? _____

7. What happened in 1824 that made critics change their mind about the canal? _____

8. Can you think of any obstacles you've faced? How did you overcome them? _____

GLOSSARY

Commerce: the buying and selling of goods on a large scale, involving the transportation of goods from place to place.

Finance: the system that makes it possible to do business, involving banking, the circulation of money, granting credit (loans), and making investments.

Obstacle: difficulty; something that stands in the way of action.

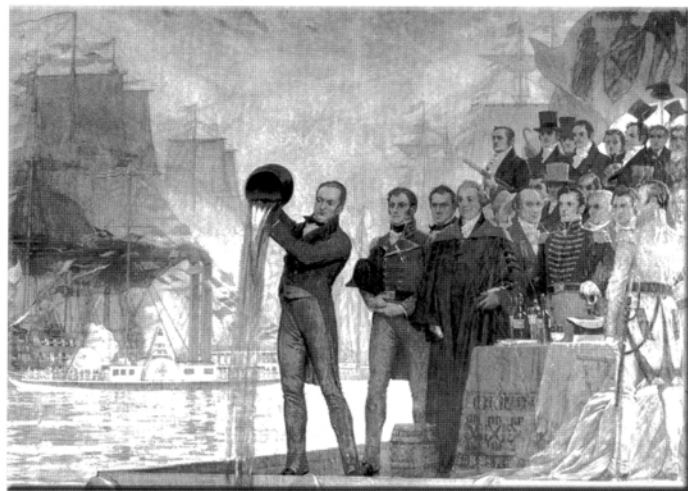
Sanitation: protecting public health by disposing of garbage and overseeing the water supply.

The Grand Celebration: Processions on Water and Land

New Yorkers were proud that they had achieved their goal of building the canal. People called it the "Eighth Wonder of the World" — one of the greatest **engineering** projects in history. New Yorkers decided to celebrate the opening of the canal and the first trip by water from Buffalo to New York City. On October 26, 1825, several beautifully decorated canal boats entered the Erie Canal at Buffalo, heading east to Albany. The canal boat *Seneca Chief* carried Governor Clinton. Two other boats, the *Young Lion of the West* and *Noah's Ark*, carried wolves, foxes, raccoons, a bear, two bald eagles and other animals from the midwestern lands near the Great Lakes. Two Native American boys of the Seneca tribe also traveled on *Noah's Ark*. Another boat, the *Niagara*, carried furs and barrels of flour and apples. These people, animals and products symbolized the western lands and the agricultural products that would now be easier and cheaper to transport to New York City.

Procession in the Harbor: *The Wedding of the Waters*

When the canal boats reached Albany, steamboats towed them down the Hudson River to the Battery, a park at the southern tip of Manhattan. They arrived on November 4, 1825. The Common Council, which helped the mayor govern the City, organized two **processions** to celebrate the event, one on water and one on land. The *New-York Evening Post* reported that "the whole population of our city, male and female, lined the walks and filled the windows of the buildings of the streets through which the procession passed." The Battery was crammed with spectators watching the aquatic part of the celebration.

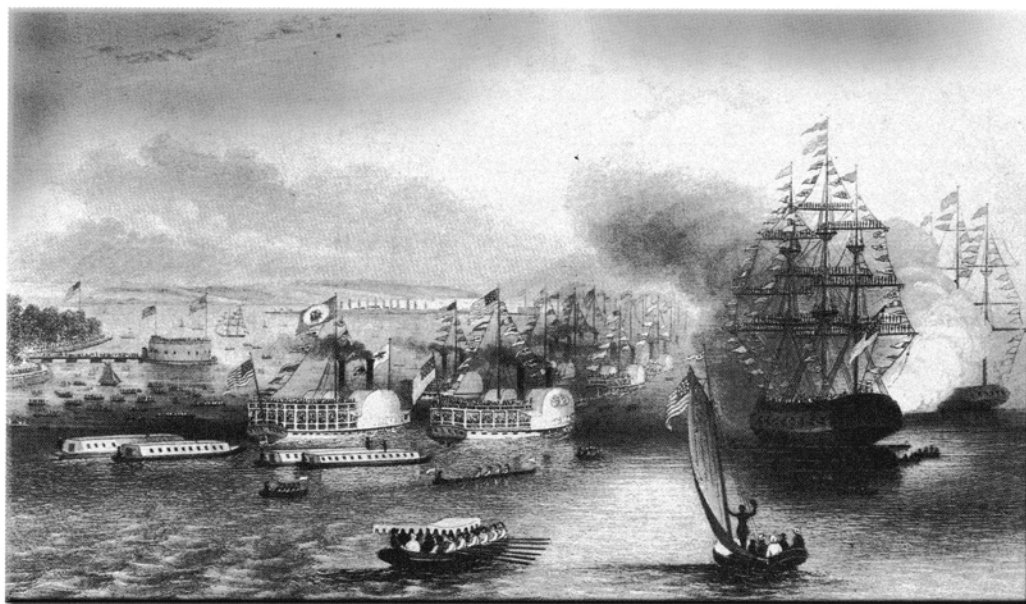


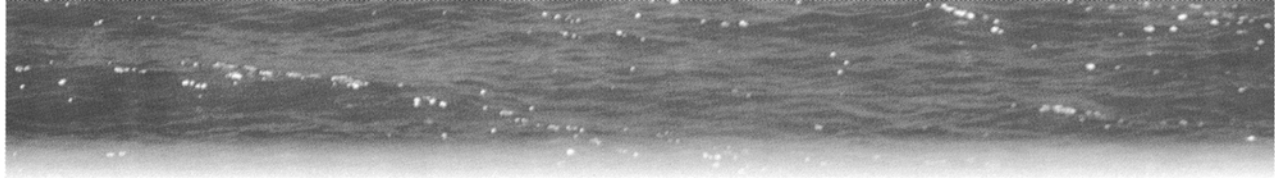
DeWitt Clinton pouring Lake Erie water into the Atlantic Ocean at Sandy Hook

Flags waved on ships and bands played music. The harbor was filled with steamboats, canal barges and sailing vessels proceeding to Sandy Hook, where New York Harbor meets the Atlantic Ocean. The procession of ships was called a **flotilla**. There, Governor Clinton poured a barrel of Lake Erie water into the Atlantic. Water from rivers around the world were also poured into the ocean from another keg. This "Wedding of the Waters" represented the idea that a man-made waterway now connected the Atlantic Ocean and the Great Lakes, and the products of the Northwest would join with goods from other nations to make New York a great commercial city.

After the Wedding of the Waters, the boats returned to the Battery. People who had been on the boats joined the parade on land and marched to City Hall, where a grand fireworks display was being prepared.

Over 100,000 people along the shores of the Hudson and East Rivers, and in Manhattan, watched the harbor celebration and the parade. Remember, this was 2/3 of the entire population of Brooklyn, Queens, the Bronx, Staten Island and Manhattan at that time. Never before in North America had such a large crowd of people gathered together in one place at the same time to celebrate an event!

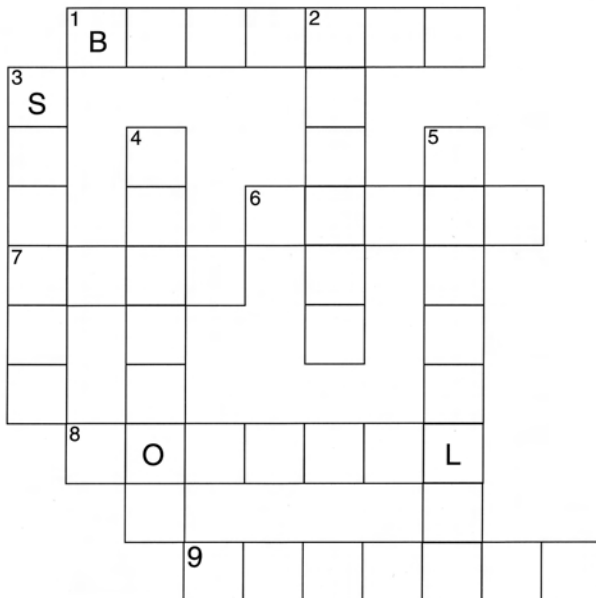




CLOSE UP: OCTOBER 26, 1825

How could people in Buffalo quickly let people in New York City know that the canal boats were on their way? They placed cannons along the canal and down the Hudson to New York Harbor. The first cannon was fired in Buffalo at 10:00 a.m. When a cannon shot was heard, the next cannon would be fired. The cannon message reached New York City at 11:20, and then the signal was returned the same way. Upstate and downstate, everyone who heard the cannons knew the celebration had begun. How would you send a message quickly today?

Cross Word Puzzle



Across

1. The procession of canal boats began in this city.
6. Bald-headed birds.
7. The new canal was named after this Great Lake.
8. The Common_____ helped the Mayor govern New York City.
9. This boat carried furs, flour and apples.

Down

2. Steamboats towed canal boats from this city to Manhattan.
3. Two boys from this tribe were in the procession.
4. The governor who helped build the canal.
5. A procession of ships.

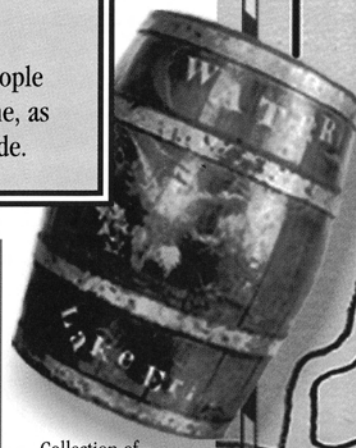
GLOSSARY

Engineering: the art and science of building a structure, like a bridge, building, or canal.

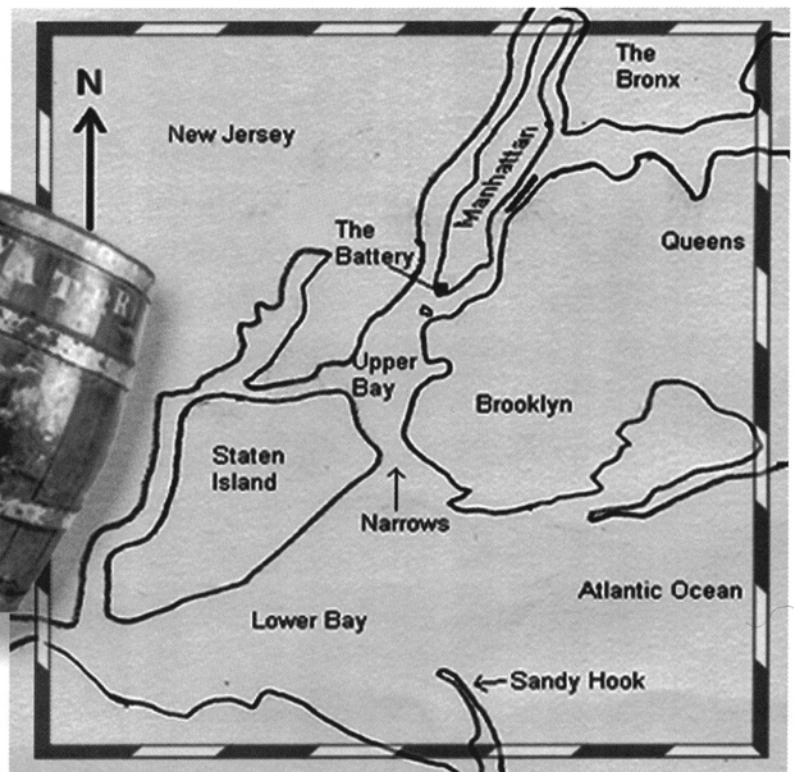
Flotilla: procession of ships.

Procession: movement of people or vehicles in an orderly line, as part of a ceremony or parade.

An object that was made or used by people in the past is called an **artifact**. The keg, or barrel, that was used to pour the water still exists today and can be found at The New-York Historical Society in Manhattan. It is an artifact.



Collection of
The New-York
Historical Society,
Negative #707



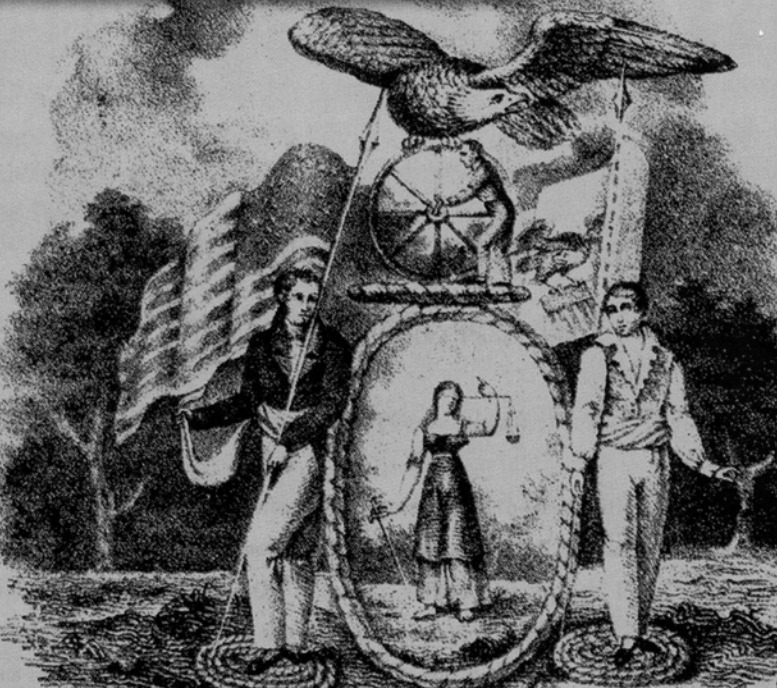
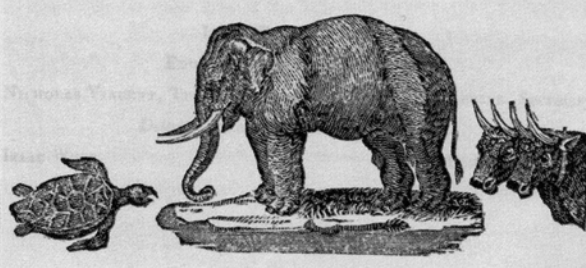
Procession on Land: Occupations in New York in 1825

Over 7,000 **artisans**, tradesmen, doctors, lawyers, teachers and students marched to celebrate the benefits the canal would bring to the City. Glass-makers, carpenters, furniture makers, shoemakers, printers and hatmakers believed the canal would be good for business, knowing that settlers heading west would need their goods. Furniture, glassware and books would be needed in new homes. Sailing ships would use rope in their rigging to carry flour and grain around the world. As commerce grew, so would the services and population needed to support it.

The marchers wanted the **spectators** to know who they were and that they were proud of their trade or skill. Workers skilled in the same craft often joined together in societies to help each other and their families when they were sick or in need. Some societies had parade floats on which workers demonstrated their crafts. Each society carried a banner, with a picture that represented their **occupation**, hanging from a standard, or pole. A picture or object that represents an idea is called a **symbol**. The eagle, for example, has been a symbol of courage and strength since ancient times. An **emblem** uses pictures or symbols as a mark of identity. In 1782, Congress chose the American Bald Eagle to be the emblem of the United States. A society might also choose a **motto**, or saying, that inspires the group to work towards a goal. It can also describe the purpose of the group. The motto often is written next to the emblem. Here are three emblems from societies march-

ing in the parade. Looking at the emblems will help you answer the questions below.

COMB MAKERS SOCIETY.



ALTHOUGH WE GO BACKWARD, STILL WE ADVANCE



Lithographic Press of Imbert & Co.

New York 1825.

ROPE MAKERS ARMS.

1. The newspapers tell us that marching chairmakers carried a wooden eagle holding a miniature chair in its mouth, with the motto: "support the chair." What other motto did these workers have? _____

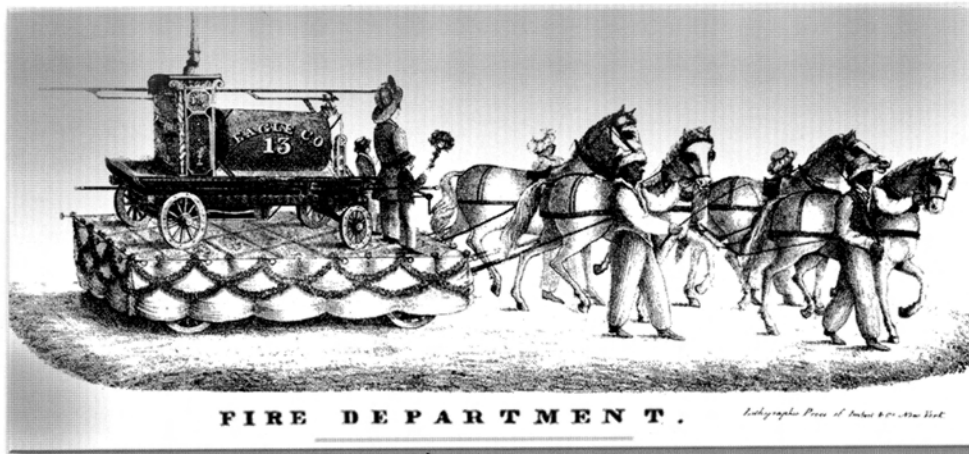
What motto would you write if you were trying to sell a chair? _____

2. Rope is made in a long narrow building called a ropewalk. Fibers from hemp (a plant) are spun into yarn. How? A ropemaker attaches fiber to a wheel. Another worker turns the wheel while the ropemaker walks backwards, feeding the fiber to the wheel. The fiber cannot be wound too loose or too tight or the yarn will be weak. The strings of yarn are then twisted into strands, which are then twisted together to make rope. What was the motto of the ropemakers? _____

If you were trying to sell rope, what motto would you use? _____

3. In 1825, comb-makers used tortoise shells, elephant tusks and animal horns to make their product. Their motto was "by these we live." During the parade, comb-makers, on a float drawn by four horses, made 50 combs that they handed out to spectators. In our time, combs are not made from animals. Why is that? _____

4. The city was proud of its volunteer Fire Department. The *New-York Evening Post* of November 5th tells us that Eagle Company 13 was one of eight fire companies that marched in the parade. How did the fire engine get to a fire in 1825? _____



5. What would you like to be when you grow up? _____

On a separate piece of paper, draw an emblem that represents the job you chose. Think of a motto to go with it.

GLOSSARY

Artisan: a worker whose occupation requires skill with the hands.

Motto: a saying that expresses a goal or purpose.

Spectator: a person who watches an event or a parade.

Emblem: a picture or symbol used to identify oneself.

Occupation: a job, how a person earns a living.

Symbol: a sign or picture representing something else.

Doing Business in 1825

Locating People and Businesses

Before New Yorkers had telephones or telephone books, they used a **City Directory** to find each other. The directory listed men and women who were the head of their household or who owned a business. They are listed by last name, first name, occupation and address.

The names below come from Longworth's city directory of 1825. Find a New Yorker to march with the societies on the right, writing their name on the line next to the society they would have belonged to.

Bogert, E. & G. grocers, 171 William
Boggs, James, pres. Phenix Bank, 163 Pearl
Boggs, William, printer, 20 Pump
Bohm, John, tavern and boarding-house, 95 James
Bohn, Nicholas, baker, Allen St near Delancey
Bokee, Abraham, customs inspector, 24 Lumber
Bolles, Robert, M.D., 186 Water
Bolles & Company, furs, 187 Water
Bolton, Robert, rope-maker, Rivington
Bolton, John and Curtis, merchants, 84 South
Bonaparte, Charles, fancy-store, 39 Catherine
Bond, Leonard, hat-store, 208 Chatham
Bond, Margaret, widow of Nathaniel, 138 Bowery
Boness, Gilbert, labourer, Ridge corner of Stanton
Bonichon, Benoit, fringe-maker, 4 Vesey
Bonnell, Hezekiah, chair-maker, 26 Chestnut
Bonner, George, sugar-refiner, 134 Duane
Bonnett, Benjamin, tailor, 4 Franklin
Bool, Henry, lumber-yard, 281 Cherry
Boom, Patience, laundress, Elm corner of Grand
Booram, Elizabeth, mantua-maker, Pear near Elm
Booth, Abraham, mariner, 122 Harman
Booth, Peter, weaver, Bedford near Commerce
Botrel, Athanese, hairdresser, 83 Nassau

Society of:

Bakers _____
Doctors _____
Furriers _____
Grocers _____
Hatmakers _____
Merchants _____
Ropemakers _____
Chairmakers _____
Printers _____
Tailors _____

Close-Up

Gilbert Boness was a labourer. This means he earned his living by doing hard physical work. Today we spell the word "laborer." The Erie Canal was built by laborers who cut down trees, drained swamps, cut and moved heavy stone, and dug ditches. Some died from accidents or diseases like malaria. When immigrants arrived in New York City, they looked for work. Some went north to work on the canal.

1. Name two people who would have been happy that canal boats were bringing more furs and lumber to the City.

2. List three occupations that you do not know.

Advertising a Product

Here is an advertisement for a hat seller. Tradesmen used symbols in their advertisements so that people could easily and quickly understand what kind of goods they sold. Think of advertisements you've seen

recently in the newspapers that use pictures in this way. Design an ad for a product you would like to sell. Here, Leonard Bond promises that his hats will be waterproof. What promise will you make about your product?



**WHOLESALE AND RETAIL
HAT WAREHOUSE,**
No. 208 Chatham-street.
The Subscriber has on hand and is constantly Manufacturing
**GENTLEMEN'S
BEAVER AND IMITATION BEAVER
WATER-PROOF HATS:**
TOGETHER WITH
YOUTH'S AND CHILDREN'S
Drab and Black Water-Proof Fur Hats.
Orders for any amount thankfully received and punctually
attended to.
LEONARD BOND.
June 1825.

Pelt: an animal skin with the fur still attached.

Retail: a storekeeper sells goods in small quantities directly to the public, raising the price to make a profit.

Wholesale: a merchant sells goods in large quantities to storekeepers at a reduced price.

The subscriber is
Leonard Bond, who placed
the ad.

CLOSE UP

Some New Yorkers, like John Jacob Astor, made their fortune sending beaver pelts to Europe. Beaver pelts were used to make hats and other clothing. The Astor Place subway station in Manhattan has ceramic pictures of beavers on the wall to symbolize the source of Astor's wealth. The seal, or emblem, of the City of New York includes beavers and barrels of flour to symbolize the products that made New York a great commercial city. Astoria, in Queens, is named after John Jacob Astor.

Your Ad Here

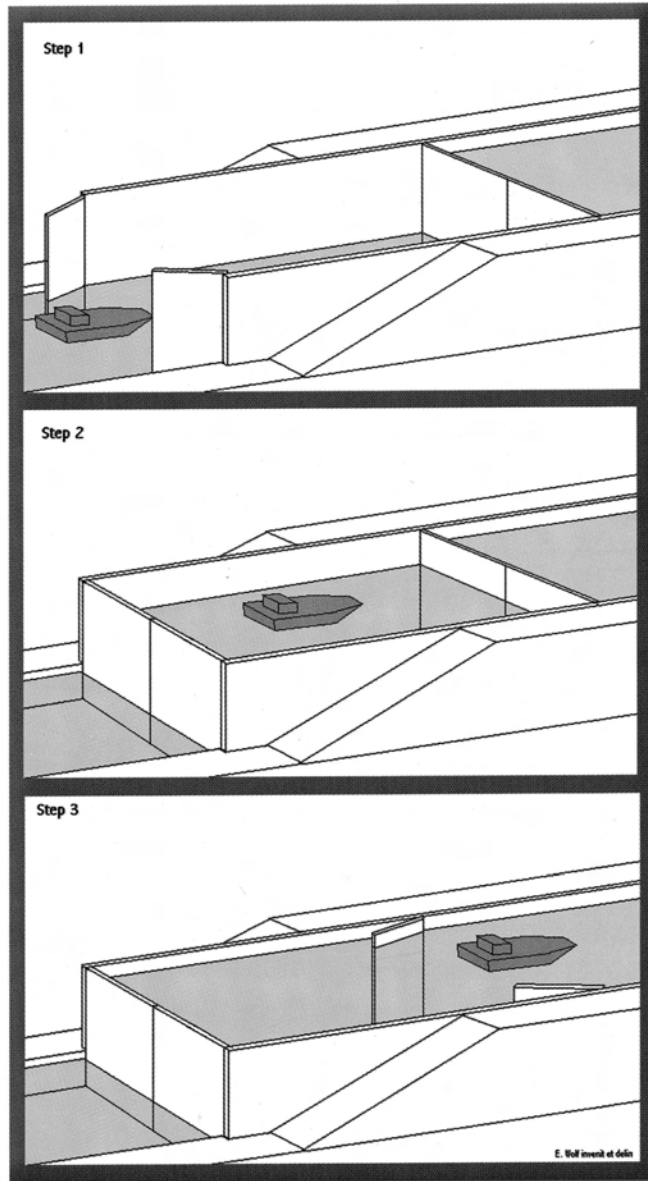
How Does A Loaded Canal Boat Go Uphill?

The Erie Canal is a man-made river linking natural bodies of water: Lake Erie and the Mohawk and Hudson Rivers (see map on opposite page).

Animals – horses, mules or donkeys – pulled the canal boats or barges (boats without engines or sails or oars) through the canal. These animals walked on a tow-path on the banks of the canal. They pulled the barges with ropes called towlines.

The Erie Canal, like other canals, connects bodies of water, which lie at different levels. A canal can never run uphill or downhill. This is because the animals could not tow the heavy loaded barges uphill and would lose control of them downhill. The solution to this problem is to make a series of level stretches of canals at different levels. A device called a lock connects these stretches. These locks elevate the boat from the lower level to the higher level or lower it from the higher level to the lower level.

Your teacher will explain how this process works.



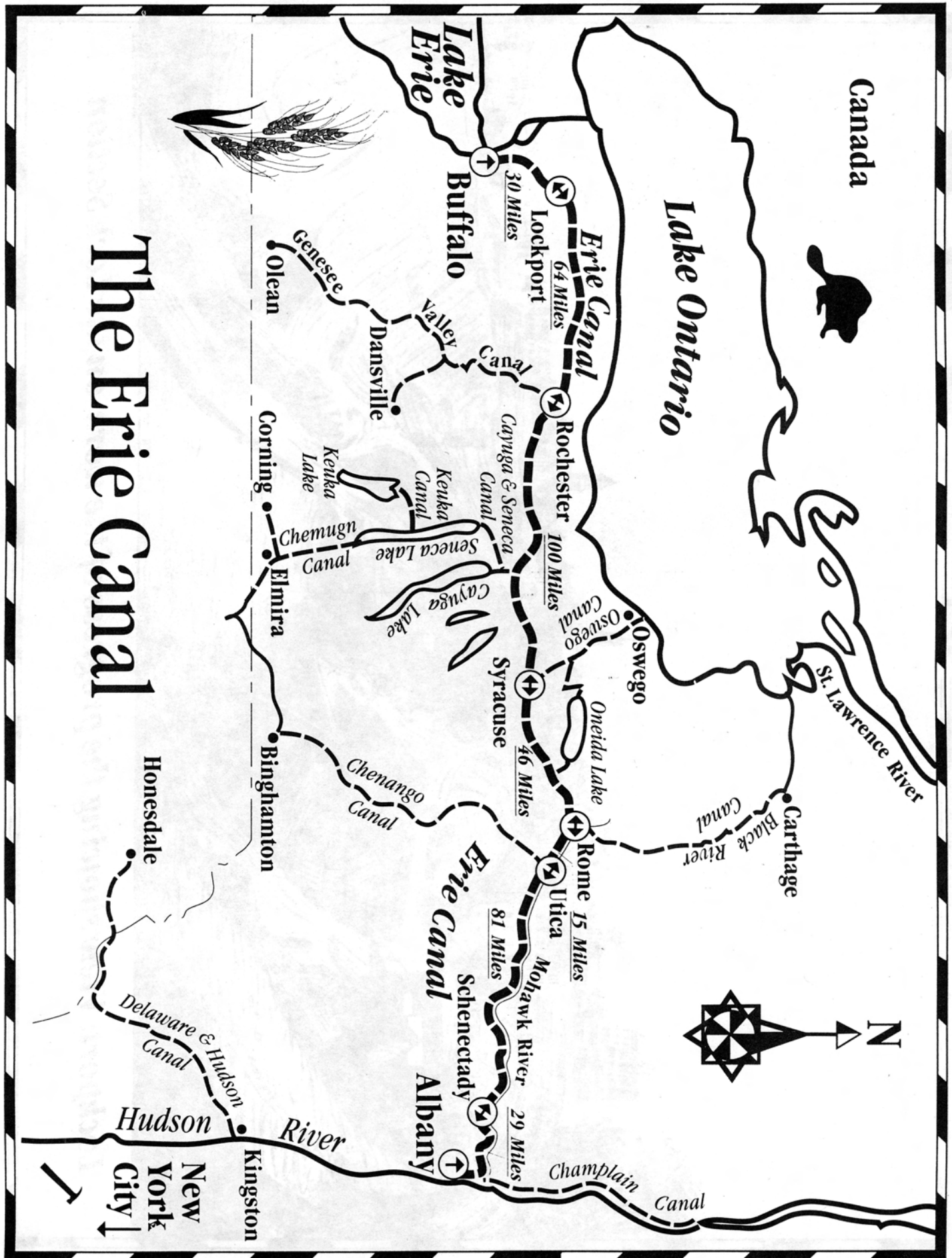
LOOK AT THE DIAGRAMS ABOVE, AND MATCH THE DESCRIPTIONS (LETTERS BELOW) IN THE PROCESS WITH THE STEPS IN THE DIAGRAMS.

- A) The gates of the lock are closed. Water flows into the lock raising the boat.
- B) The water level inside the lock is the same as the water level on the upper level. The upper gates are opened and the boat can take its towline and continue up the canal.
- C) The boat on the lower stretch of the canal reaches the lock. It enters the lock through the open lower gates and casts off its towline.

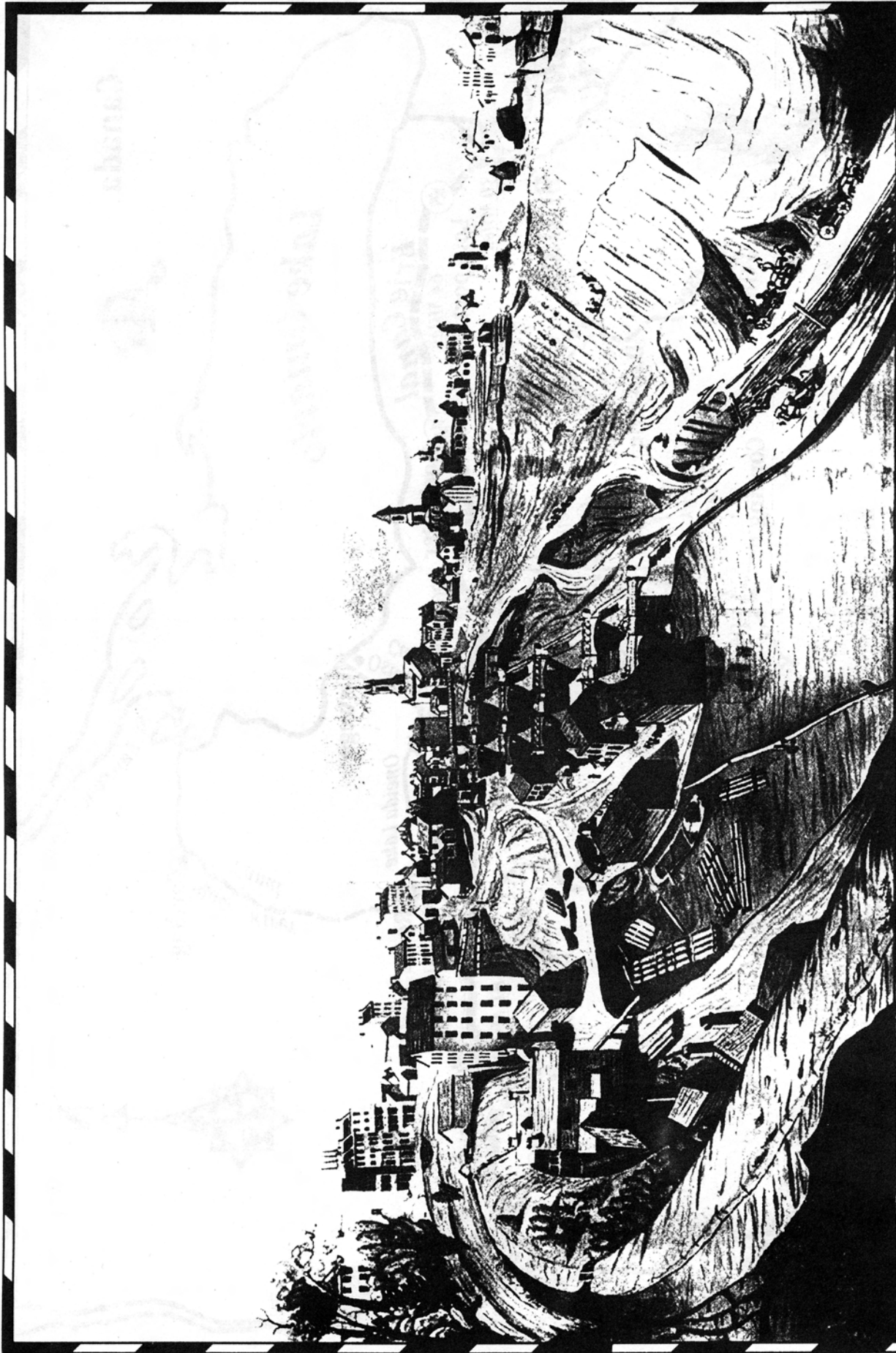
STEP 1: _____

STEP 2: _____

STEP 3: _____



The Erie Canal

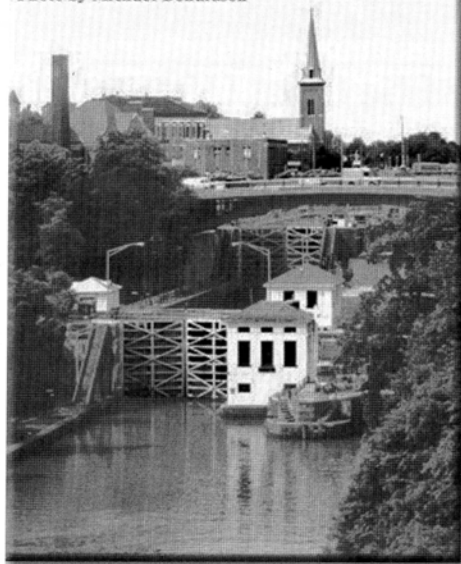


Lockport: View showing the progress of the work on the Lock Section

Lockport, New York and the Erie Canal

The drawing on the insert in this book is of the town of Lockport in upstate New York from the year 1839. Lockport is in western New York, just east of Buffalo. It was one of the first important stops on the journey from the canal's western terminal in Buffalo on its path to Albany, and, via the Hudson River, New York City. In the center is the flight of five locks, one of the most dramatic climbs on the Erie Canal. The town of Lockport was built around the Erie Canal. Notice how quickly the town had grown around the canal (the Erie Canal opened officially

Photo by Michael Donaldson



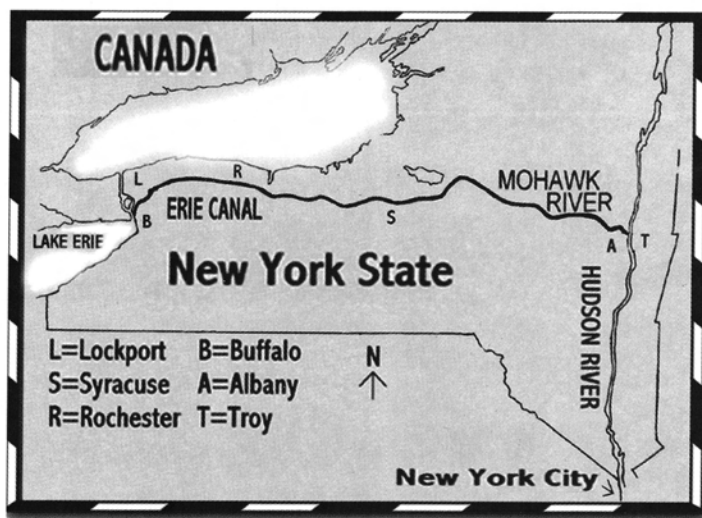
in 1825, though stretches were open before the entire canal was complete). This drawing is very useful to us today because it freezes a moment in 1839 for all time. What do you see in the town?

Can you identify any of the buildings and structures?

Why do you think the town was named Lockport?

While the buildings and activities in the foreground seem to be related to the canal, those in the background seem to be typical of those found in any prospering town.

Remember, this town was only as old as the canal – and the canal at the time of this drawing wasn't even 15 years old! This type of rapid growth was common in the upstate towns along the route of the Erie Canal. Older towns like Syracuse and Albany more than doubled their populations with the construction of the canal.



CLOSE UP

The small photograph, above, is of the same section of the town today. The large double set of locks in the center was built as part of the Erie Barge Canal of 1918 and is still in use. Notice just to the right of these locks (partly hidden by the trees) is one flight of the set of five locks from the original Erie Canal of 1825. In the background it can be seen that the town of Lockport is still very much alive with a population of 22,650 (in 1998).

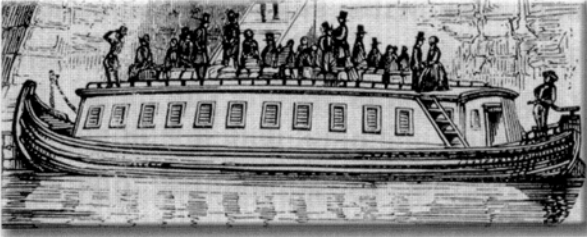
On a separate piece of paper, draw a picture of your neighborhood. What kinds of buildings and businesses are there? _____

The canal was the main method of transportation in Lockport. What is the main method of transportation in your community? _____

The Different Types of Canal Boats

The Packet Boat (1825-1858)

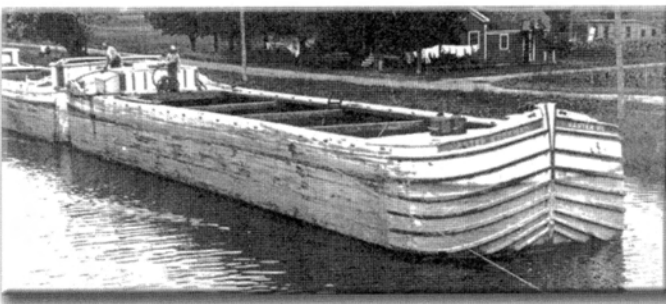
Packet boats were canal boats for carrying passengers. When the Erie Canal was built in 1825, these boats were the fastest way to travel across New York State. By 1858, however, these boats had become very rare, as the railroad offered an even faster method of transportation. To fit in the original locks of the canal, packets were limited



ed in size to 78 feet in length by 14 1/2 feet in width. A modern-day New York subway car is 51 feet long by 8 feet, 10 inches in width. The packet boat could carry between 50 and 100 people. A subway car comfortably seats 44 people, but at rush hour packs between 60 and 94 passengers.

The Line Boat (1825-1917)

Line boats were the canal boats that were used to haul freight. Bigger boats were built each time the canal was enlarged. All boats on a canal must be small enough to fit in the canal's locks. In 1825 the maximum size of a



boat was 78 feet in length, 14 1/2 feet in width and 3 1/2 feet in draft (depth underwater). By 1836 the canal was enlarged allowing larger line boats of up to 97 feet in length, 17 1/2 feet in width and 6 1/2 feet in draft. The canal was still as little as 18 feet wide between its tow-paths. In a modern subway station there is 50 feet in the pit where the tracks lie between the platforms.



Barges on the Erie Canal (1918-)

The last enlargement of the Erie Canal, called the Erie Barge Canal, was opened in 1918. This canal allowed for barges as long as 250 feet in length by 30 feet in width. While these boats no longer were pulled by animals (they



were now either self-propelled by steam engines or pulled by steam-powered tugs) the other principles of canal navigation remained much the same.

CLOSE UP:

TYPICAL CARGO SHIPPED

To New York City:

Flour, Apples, Lumber, Potatoes, Furs
Whiskey, Grain (Wheat, Corn, Rye, Barley &
Oats), Meat (Beef & Pork)

From New York City:

Iron, Manufactured Goods (Tools, Furniture,
Glassware, Books, etc.)

Word Search Game

Answer the following questions about the Erie Canal and the boats that traveled on it. Then find the words in **bold** in the word search game. Words are forward, backward, across, down and diagonal.

Word Search Game

T	P	A	S	S	E	N	G	E	R	E	A	X	R	Q	Z	H	T	N	B
Y	O	C	H	D	V	I	B	C	A	P	T	A	E	W	F	U	H	G	P
K	I	W	N	G	N	J	B	H	S	U	I	C	L	Y	U	D	H	A	C
M	Q	P	R	W	E	R	T	A	T	L	Y	A	U	I	O	S	S	P	A
V	S	A	D	O	F	A	G	H	R	J	K	N	L	Z	X	O	C	V	B
E	N	C	M	L	P	K	J	O	H	G	G	A	F	D	S	N	A	Z	C
P	M	K	P	W	O	E	A	Q	R	T	E	L	U	M	Y	F	D	S	A
B	B	E	O	V	G	D	Y	H	N	J	I	K	L	C	F	T	M	E	P
L	N	T	R	A	N	S	P	O	R	T	A	T	I	O	N	G	J	S	O
U	V	A	E	I	J	L	N	Q	U	R	W	G	N	R	A	L	U	T	I
O	C	W	V	F	R	E	I	G	H	T	V	A	E	N	G	I	N	E	U
J	X	S	L	I	K	H	S	F	D	S	A	Y	B	M	B	H	T	A	Y
C	E	R	I	E	G	M	T	R	O	P	K	C	O	L	C	K	N	M	T
I	Z	D	F	H	K	A	U	P	S	V	X	L	A	P	D	I	B	W	R
S	L	F	G	B	O	A	T	S	T	U	N	Z	T	Y	M	J	G	Q	E
T	K	G	A	T	Y	I	U	E	R	W	Q	E	P	A	L	S	F	A	W
N	J	H	Z	M	X	N	C	B	V	G	H	F	L	J	D	K	V	Z	Q
K	C	O	P	S	O	Y	T	F	E	R	X	S	G	N	U	B	A	M	N
T	A	M	N	Y	G	I	L	G	O	A	T	E	N	H	M	O	R	P	W

Word List

Transportation
Passenger
Erie
Canal
Freight
Packet
Lineboat
Barge
Railroad
Hudson
Towpath
Lock
Tug
Steam
Engine
Mule
Animals
Boats
Towrope

- Canals were used for different types of **transportation**. A **passenger** on the **Erie Canal** would travel on a 1) _____, while **freight** was shipped on a 2) _____ or a 3) _____.
 a) **Packet** b) **Lineboat** c) **Barge** d) Wagon e) **Railroad**
- When canal boats reached the 1) _____ River they would be towed to New York City by steamboats.
 a) Mississippi b) **Hudson** c) East d) Harlem e) **Erie**
- A boat traveling on a canal is limited in length to the size of the canal's smallest 1) _____.
 a) **Barge** b) **Towpath** c) Donkey d) **Lock** e) **Tug**
- Before the **steam engine** was used to tow boats on the canal, canal boats were pulled by **animals**. These animals were connected to the **boats** by a **towrope** as they marched along a **towpath**, a road next to the canal. The most common animal used to pull canal boats was a 1) _____.
 a) Tiger b) Dolphin c) Horse d) **Mule** e) Ox
- After the expansion of the canal in 1918, **barges** were either 1) _____ or towed by 2) _____, instead of being pulled by **animals**.
 a) **Railroads** b) Self-propelled c) Cars d) **Tugs** e) **Lineboat**
- What is the difference between the type of **freight** shipped to New York City and the type shipped from New York City? Why do you think this is? _____

Traveling on the Canal

How Fast Could You Go? The speed limit on the canal was 4 miles per hour. Teams of horses or mules pulled packet boats at 3 to 3-1/2 miles per hour, and heavier line boats at 2 miles per hour – the speed at which animals and humans walk. Today, 20 city blocks equal one mile. If you were walking 3 miles per hour, how many city blocks would you cover in one hour?

Packet boats could travel 80 miles or more in 24 hours, making the trip from Buffalo to Albany in 4 to 6 days. Line boats carrying freight and a few passengers usually covered 60 miles in 24 hours. This seems slow to us today, but it was much cheaper and faster than traveling by stagecoach or shipping freight by wagon.

Before the canal was built, it cost \$100 to ship a ton (2000 lbs.) of wheat. It cost more to ship flour to market than it did to grow the wheat it came from. After the canal, it cost only \$5 a ton. How many dollars were saved? _____

The Railroads Compete with Canals. People who wanted to save time traveling on the canal often began or ended their trip at Schenectady. There were so many locks between Albany and Schenectady that it was quicker to take a stagecoach or the railroad. Hudson River steamboats carried passengers or towed line boats between Albany and New York City, 150 miles apart. As railroads spread across the state and down the Hudson in the 1830s, 40s and 50s, passengers chose to travel on them instead of the canal. It's easy to see why - trains at that time traveled at 30 miles per hour, while canal boats only traveled 2 to 4 miles per hour. By 1852, passengers could travel all the way from New York City to Buffalo on the train. Railroads had another advantage. The Erie Canal was closed from approximately December to May, because cold weather froze the water in the canal. Even steamboats had trouble getting down the icy Hudson. Railroads operated all year round. By 1858, the Erie Canal was used almost entirely for carrying freight.

<u>Trip</u>	<u>How</u>	<u>Time</u>	<u>Distance Traveled</u>
Genesee Valley to Albany	Ox-drawn wagon	20 days	230 miles
Buffalo to NYC	Line boat	10 days	510 miles

The canal made it possible to travel more than double the distance in half the time!

IT IS 1847. YOU WILL BE TRAVELING ON THE CANAL. USE THE MAP AND THE ADVERTISEMENT TO ANSWER THE QUESTIONS BELOW AND ON THE NEXT PAGE. MILEAGE IS GIVEN BETWEEN EACH CITY ON THE MAP.

1. This is an advertisement for the Red Bird Line company. What kind of transportation business are they in? _____

2. What is the name of the packet boat and who is the Captain? _____

3. List the cities in the advertisement, and then find them on the map. _____

4. Which city is farthest west? _____ Which city is farthest east? _____

5. Look at the map. How many miles is it:
From Buffalo to Lockport _____ Rochester to Syracuse _____ Schenectady to Albany? _____

6. If you are traveling at 3 miles an hour, how many hours will it take you to get from Buffalo to Lockport? _____

7. What time does it leave Buffalo? _____

8. How much will it cost to travel from Buffalo to Rochester with board? _____

9. What is the fare from Buffalo to Schenectady with board? _____
10. When you arrive in Rochester, there is another way to get to Syracuse.
What is it? _____
11. Read the first headline. How did the Red Bird Line feel about the railroads?
Why do you think that is? _____

GLOSSARY

Passage: the cost of travel, the fare
Board: meals and bed are provided

Did you know? Immigrants and farmers moving West often traveled on line boats, because fares were cheaper and they could bring their heavy belongings with them. Thousands of immigrants used the canal to reach new settlements in Ohio, Michigan, Illinois and Indiana.

PASSENGERS

Passengers slept and ate on the packet boats. There were two rooms on the boat, one for women and small children and one for men. At night time, a curtain was pulled between the two rooms, and passengers slept on bunk beds against the wall.

OPPOSITION TO THE RAIL ROAD.

Red Bird Line

**FOR ROCHESTER,
SYRACUSE AND SCHENECTADY.**

THE NEW AND SPLENDID

PACKET  **BOAT**

NIAGARA

CAPT. D. H. BROMLEY,

Leaves Buffalo for Lockport and Rochester,

THIS EVENING,

AT 7 O'CLOCK,

And arrive at ROCHESTER in time to take the Packet or Rail Road to SYRACUSE, making the passage to Syracuse in THIRTY HOURS.

N. B. THIS NEW PACKET IS

100 Feet Long

Fitted up expressly for pleasure travel, with

LADIES' AND GENTLEMEN'S SALOONS,
and ventilators in the Deck.

PASSAGE,

TO ROCHESTER, - - - - -	\$1.50
PASSAGE TO ROCHESTER, including Board, - -	2.00
" " SYRACUSE, " " - - -	4.50
" " UTICA, " " - - -	6.00
" " SCHENECTADY, " " - - -	7.50
WITHOUT BOARD, - - - - -	\$5.50

FOR PASSAGE

Apply to the CAPTAIN on Board, or at the PACKET DOCK OFFICE, Commercial Street Dock.

H. STILWELL & CO.—Proprietors.

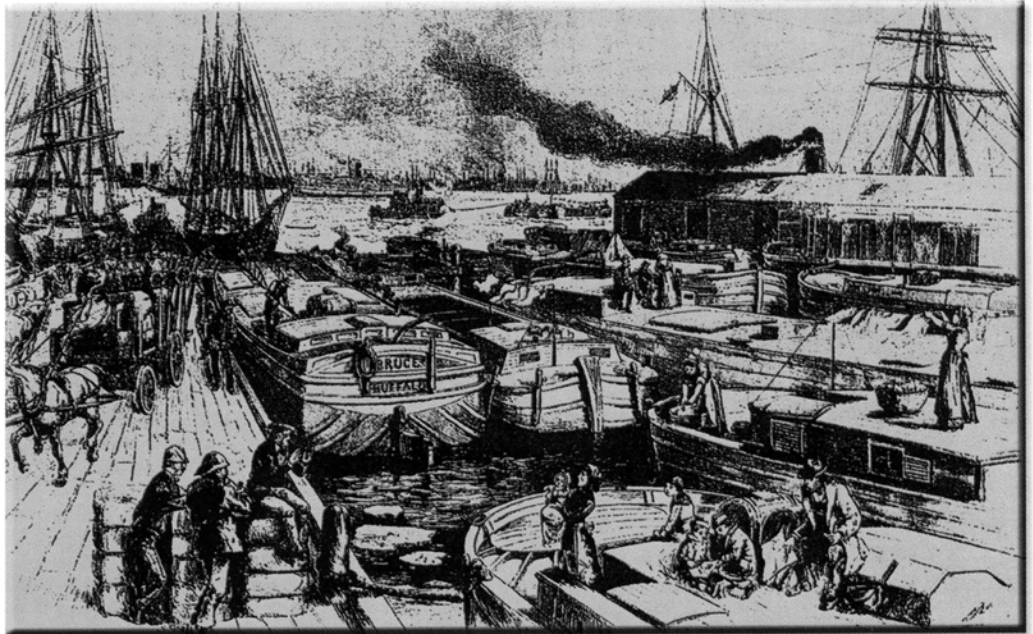
Buffalo, 1847.

L. E. HARRIS,—Agent.

Steam Press of Jewett, Thomas & Co., Com. Adv. Office.

Canal Children and Canal Communities

During the 19th century, many canal boats were owned by families. The canal boat was the working and living space for the captain and his family, a small crew, and 4 mules. They lived in two separate rooms and a stable on a floor below the boat deck and above the cargo hold. The boat traveled all day and all night. The mule driver, called a hoggee, drove a team of two mules along the tow path while the other mules rested. The captain's wife did the cooking and laundry for her family and the crew. Parents often tied their small children to the deck by a long rope so that they would not fall off the boat into the canal while no one was looking. Children played on deck and helped with chores. By the time they were twelve, children usually helped drive the teams.



CLOSE UP:

In 1909, six-year old Richard Garrity traveled on his family's canal boat to NYC. They were delivering lumber to the Steinway piano factory. While waiting for cargo for the return trip, Richard and his brother visited the New York Aquarium, then located at Castle Clinton on the Battery, and saw the Fulton Fish market at South Street. In 1909, you could buy hot dogs from food vendors along South Street for a nickel apiece!

Canal boat families lived a life of constant movement, gliding past towns and farms along the canal. Canal children had a shorter school year than other children because they could only go to school when the canal was closed for the winter, from December to May. When the canal closed, many families tied their barges together at Piers 5 and 6 near South Street in Manhattan, or at the Erie Basin in Red Hook, Brooklyn, so that their children could attend City schools. Looking back on their childhood, grown-up canal children regretted the lack of schooling and the lack of space and privacy, but they treasured growing up in the open air, seeing different sights every day. With the widening of the canal in 1918, the new barges were too large to be pulled by mule or horse power. Older children were important workers on the old canal barges, but could do little on the new barges. By the early 1920's, barge captains had their families live on land all year round so that they could have a better quality of life.

1. Here is a drawing of a canal boat community in Manhattan. What are people doing on the decks?

2. How many different kinds of boats do you see?

3. Do you think you would have liked growing up on a canal boat? Why or why not?

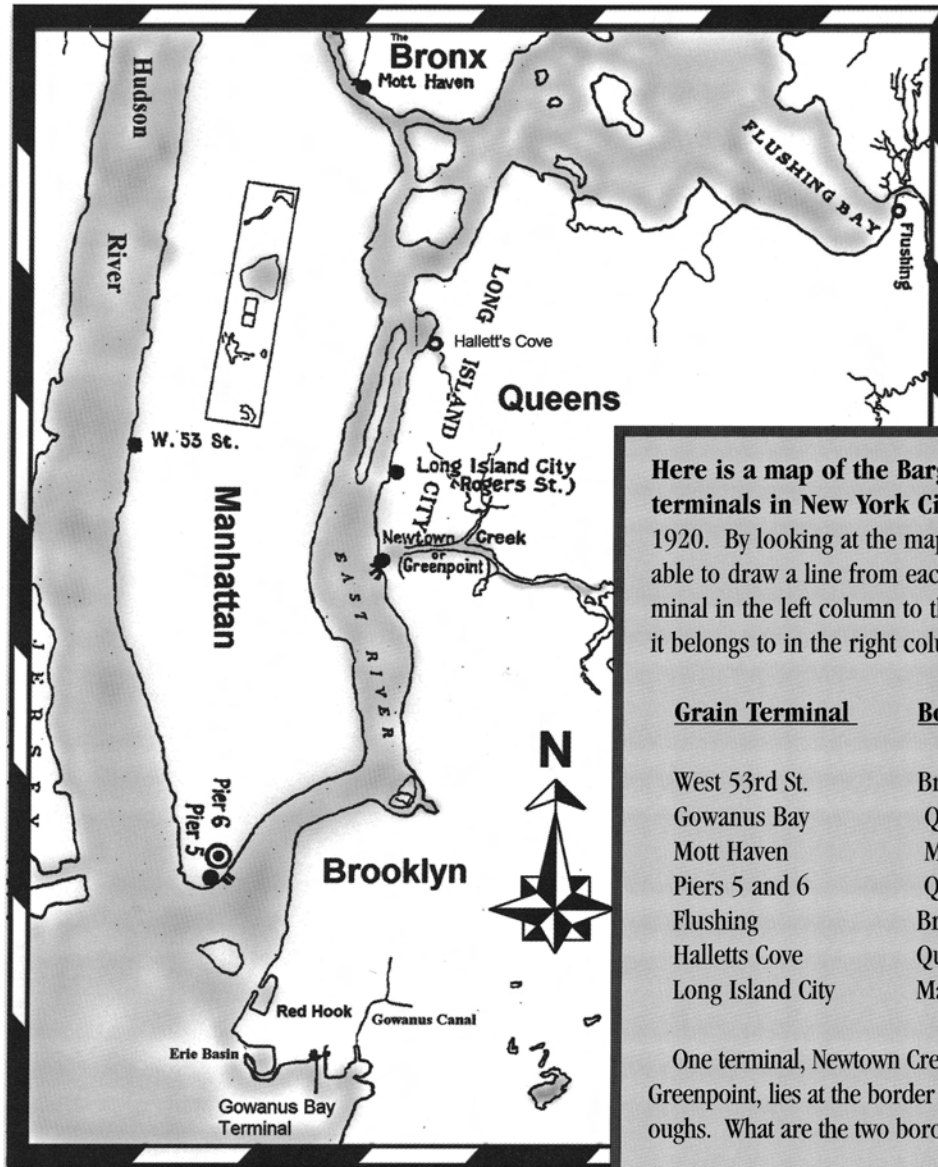
The Canal and New York City in the Twentieth Century

The Erie Canal was widened and modernized in 1918 to handle larger and heavier barges that could be towed or driven by engine power. The Erie Canal and other canals became part of the New York State Barge Canal System. New York City was still the leading exporter of flour and grain. Special grain terminals were built throughout the City to transfer the product to

ships for export. New York Harbor was also busy with other barge traffic. Tugboats helped barges travel back and forth between railroad terminals in New Jersey and the Brooklyn piers. They brought goods to the piers for shipping to other countries, and coal from Pennsylvania (used for fuel) to New Yorkers. Barges also carried goods manufactured in Brooklyn and Queens back to New Jersey for shipment by railroad to other parts of the country.

The grain terminals never handled as much freight as originally planned. The opening of the Saint Lawrence Seaway in 1959 made it possible to ship Canadian grain to the Atlantic via Montreal instead of New York. Trucks could use the New York State Thruway to move goods across the state. Large container ships were invented.

They used the deeper waters of the Hudson along the New Jersey coast. Container ships, railroads and trucking reduced traffic on the Barge Canal. Today, the New York State Canal System, as it is now called, is used mostly for recreation. People have fun boating and canoeing on the canal. It's open from early May through November, and the speed limit is 10 miles per hour, 6 miles per hour faster than in 1825!



Here is a map of the Barge Canal terminals in New York City, circa 1920. By looking at the map, you'll be able to draw a line from each grain terminal in the left column to the borough it belongs to in the right column.

Grain Terminal	Borough
West 53rd St.	Bronx
Gowanus Bay	Queens
Mott Haven	Manhattan
Piers 5 and 6	Queens
Flushing	Brooklyn
Hallett's Cove	Queens
Long Island City	Manhattan

One terminal, Newtown Creek/Greenpoint, lies at the border of two boroughs. What are the two boroughs?

Did you know? There are more than 40 islands in New York City! Of the City's five boroughs, two are separate islands. Two other boroughs are on Long Island. Only the Bronx is on the mainland U.S. Can you think of any other islands?

You are a Hollywood director making a movie about the life story of the Erie Canal. What story would you tell? Write it down on a separate sheet of paper.



The Erie Canal

Moderato

1. I've got a mule, her name is Sal, Fifteen miles on the Er-ie Can-al.
 2. We bet-ter get a-long on our way, of gal

{ She's a good ol' work-er an' a good ol' pal, } Fifteen miles on the Er-ie Can-al.
 { 'Cause you bet your life I'd nev-er part with Sal, }

{ We've hau'd some barg - es in our day, Fill'd with lum - ber, coal and hay, And
 Git up there, mule, here comes a lock, We'll make Rome 'bout six o - clock, }

we know ev-'ry inch of the way from Al - ban - y to Buf - fa - lo.
 One more trip an' back we'll go Right back home to Buf - fa - lo. }

Low bridge, ev - 'ry - bod - y down! Low bridge, for we're
 com - in' to a town? And you'll al - ways know your neigh - bor, You'll
 al-ways know your pal, if you've ev - er nav - i - gat - ed on the Er-ie Can-al.

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La Guardia Community College/CUNY
 31-10 Thomson Avenue, E-238, Long Island City, NY 11101
 Tel: 718/482-5065 Fax: 718/482-5069
www.laguardiawagnerarchive.lagcc.cuny.edu